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## A new generation of LNG carriers



20 March 2017

Article from **Kjetil Sjølie Strand**, Managing Director at **LNG New Technologies AS**.

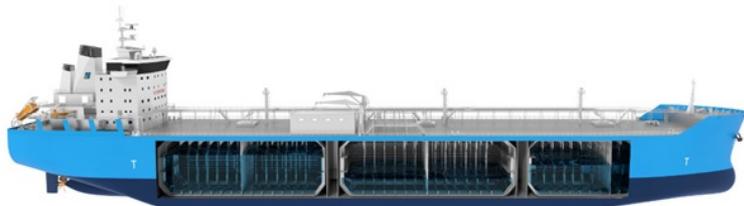
The shift from coal to gas power generation, adaption of LNG as marine fuel and an increasingly diverse trading pattern of LNG are creating a rise in demand for mid-size LNG carriers and FSRUs. Saga LNG Shipping is one of the companies that targets to build on this growing demand, and has its first mid-size LNG carrier under construction.

Our world's growing energy demand needs to be met by affordable and sustainable energy sources. Natural gas is currently the fastest growing fossil fuel market, while both oil and coal are on the decline. Natural gas is the cleanest fossil fuel and can replace heavier carbon-fuels, leading to a significant decrease in emissions. Natural gas will represent a bridge from heavy carbon fuels to a future relying more and more on renewable energy sources.

As the natural gas and LNG trade is on the rise, it is also becoming more diversified. The traditional value chain has long focused on large scale transport of LNG between continents. However, this picture is developing, with growing demand for regional distribution for industry, domestic use and transportation fuel. LNG is becoming a commodity, analogous to the development both of the oil tanker and container fleet over the past decades, in which the economy of scale trend was further developed into a more diversified and optimised trade as the markets matured. Following this development trajectory, albeit a few decades later, there is a need for development of more diversified infrastructure to meet demand in the LNG industry.

Many of the technologies in use for seaborne transportation of LNG today are principally the same as developed in the early decades of LNG shipping. Vessel size has however undergone considerable development. Driven by the economy of scale and long transport distances, the average size of LNG carriers has increased significantly over the years and the thus development has focused on large scale ships. Now the market is maturing and trading distances seem to become shorter rather than longer. Thus, local and regional distribution which need to be serviced by smaller and more flexible vessels seems to be a growth sector going forward.

Based on this development the LNG New Technologies (LNT) decided to develop a new containment system for LNG particularly suitable for medium size LNG carriers. The idea was to develop and commercialize a simple and efficient cargo containment system that could enable more shipyards to build the LNG carriers. Based on broad experience with different types of liquefied gas carriers, knowledge to the IGC Code and its background the team came up with the LNT A-BOX® design. The system is based on proven technologies, but in a new configuration and patent protected by LNG New Technologies. The LNT A-BOX® is based on an IMO independent tank type A as the primary barrier, a conventional cargo tank support system and liquid tight thermal insulation attached to the hull compartment acting as a full secondary barrier.



Saga LNG Shipping's has ordered the first vessel in this new generation of LNG carriers, a 45,000 m3 LNG carrier being built at China Merchant Heavy Industry (Jiangsu) Co.,Ltd. The vessel is designed based on the LNT A-BOX® containment system as a medium size LNG carrier for worldwide trade, but with special emphasis on requirements for local and regional trades, and re-loading from large terminals.

Mid-size LNG carriers, such as Saga's 45,000 m3 vessel is an enabler for efficient distribution of LNG to regions and users too small to defend investment in large scale infrastructure, where access to affordable energy is vital for sustainable growth.

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